Policy, Research, and External Affairs

WORKING PAPERS

Public Sector Management
and Private Sector Development

Country Economics Department
The World Bank
August 1990
WPS 475

Does Divestiture Matter?

A Framework for Learning from Experience

Ahmed Galal

An analytical framework for empirically evaluating the effects of divestiture.

Policy, Research, and External Affairs

WORKING PAPERS

Public Sector Management
and Private Sector Development

WPS 475

This paper -- a product of the Public Sector Management and Private Sector Development Division, Country Economics Department — is part of a larger effort in PRE to: (1) assess the divestiture experience to date; (2) determine the factors that led to its success or failure; and (3) suggest how the World Bank and its borrowers may effectively use divestiture as a public policy tool to enhance economic development. This paper is a revised version of a research proposal that the World Bank's Research Committee has approved for funding. Work implementing the proposed methodology is underway in Chile, Mexico, the U.K., and Malaysia.Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Gloria Orraca-Tetteh , room N9-069, extension 37646 (31 pages).

The economic rationale for divestiture rests on two propositions: that it will improve firms' productive efficiency and that it will reduce the budgetary burden that public enterprises impose.

But there has been almost no empirical analysis of what actually happens after divestiture, of which enterprises are desirable candidates, and under what conditions divestiture might improve a country's economic performance.

Galal provides an analytical framework (partial equilibrium analysis) for assessing these basic arguments and evaluating the lessons of experience.

To avoid the shortcomings of the few studies that have been done, Galal says three questions must be asked: What are the changes in economic efficiency and fiscal incidence, if any? What possible factors explain divestiture outcomes? What is the causal link between outcomes and their hypothetical determinants?

Galal suggests that to tease causality out of the limited data that exists on this relatively recent phenomenon, analysts compare data on:

- The same enterprise before and after divestiture.
- Divested and undivested firms in the same sector and same country.
- The performance of the divested firm and an explicit counterfactual (the hypothetical performance of the firm had it remained public).
- The performance of divested firms in competitive and noncompetitive markets in the same country.
- The performance of divested firms in the same industry but different countries.

Produced by the PRE Dissemination Center

TABLE OF CONTENTS

DOES DIVESTITURE MATTER?

A FRAMEWORK FOR LEARNING FROM EXPERIENCE

INTRODUCTION[1]/

Transferring ownership and control of enterprises from the public to the private sector has recently attracted great interest around the world. Several developed and developing countries have already divested varying portions of their public enterprise (PE) sectors,[2]/ and many others are planning to follow suit. In addition, some international organizations have been actively supporting divestiture in most of their borrower countries.[3]/

Political and ideological justifications aside, the economic rationale for divestiture rests primarily on two empirically verifiable propositions:

1. Divestiture will improve productive efficiency at the level of the firm.

---

[1]/ This paper is a revised version of a research proposal, which was approved by the World Bank's Research Committee in August 1989 (Galal, 1989). Work is underway in 5 countries: the U.K, Malaysia, Togo, Mexico, and Chile. The author would like to acknowledge valuable comments by M. Shirley, J. Nellis, L. Jones, J. Linn, B. Balassa, C. Frischtak, P. Guislain, A. Gelb, and B. Lee, and secretarial assistance by G. Orraca-Tetteh.

[2]/ These include such developed countries as the U.K., France, Spain, Italy, New Zealand, and Canada and such developing countries as Chile, Bangladesh, Jamaica, Mexico, Malaysia, the Philippines, and Togo.

[3]/ The World Bank, for instance, has supported divestiture programs in some 35 countries, as of June 1989.

2. It will reduce the budgetary burden posed by PEs.

To date, however, little rigorous empirical analysis has been undertaken to substantiate the arguments for divestiture, or to construct an empirically based set of stylized conditions under which divestiture may or may not work, particularly in developing countries. As a result, while convinced of the theoretical plausibility of the benefits of divestiture, many observers continue to lack the supporting evidence to answer such basic questions as: what happens in the wake of divestiture, which enterprises--from a country's perspective--are desirable candidates, and, most important, under what conditions will divestiture contribute positively to a country's economic performance?

This paper provides an analytical framework for assessing the arguments for divestiture and for evaluating the lessons of experience. Its aim is to provide researchers with a mechanism (approach, means) to analyze the divestiture phenomenon more rigorously than has been attempted thus far. Ultimately, the findings of such analysis will enable policymakers to form more realistic expectations about the results from undertaking divestiture decisions and the conditions necessary for attaining the maximum benefits from the application of this instrument.

Organizationally, this paper summarizes the rationale for divestiture, reviews (albeit not comprehensively) the empirical evidence, and then proposes a framework for undertaking an empirical investigation of the performance of divested firms. The paper is confined to partial equilibrium analysis, even

though it addresses the fiscal impact of divestiture. It assumes a small sample setting, thus precluding econometric analysis. The paper's overall objecive is to construct a framework for assessing the advantages and disadvantages resulting from the sale of a single enterprise, not for assessing a country's overall divestiture program.[4]

DIVESTITURE RATIONALE

The growing interest in divestiture stems in part from increasing dissatisfaction with the performance of PEs and the exhaustion of government resources to support their alleged inefficiency. These assertions, even if rigorously confirmed, certainly suggest that PEs ought to be reformed more effectively, but they do not necessarily make the case for divestiture. Divestiture finds its strongest argument in the claims that (1) it will improve productive efficiency by maximizing output and minimizing input within the firm, and (2) it will reduce the budgetary burden of PEs.[5/]

[4/] It could be argued that the assessment of an overall divestiture program is nothing but summing across the assessment of individual cases. This, however, is only true in part. Partial equilibrium analysis excludes general equilibrium effects by definition.

[5/] Divestiture, it is also claimed, will achieve other objectives: (1) greater access to private-sector financing, (2) broader share ownership, (3) faster development of capital markets, (4) enhancement of competition, and (5) reduction of the administrative burden on the government bureaucracy. These objectives are not treated in this paper as the primary objectives of divestiture for the following reasons. First, most of them, it can be argued, could equally, and perhaps more effectively, be achieved via alternative instruments--e.g., financial sector reform and deregulation. Second, from an analytical point of view, most of these objectives are not ends in themselves. Rather, they are instruments to improve efficiency. Viewing them as objectives rather than instruments in a framework that aims at assessing the performance of divested firms under varying conditions of market structures, capital

The Economic Efficiency Argument

Adam Smith asserted the connection between ownership and efficiency. However, the claim that private owners are inherently more efficient than public owners is seldom treated in neo-classical microeconomic theory. This theory is essentially silent on the role of ownership in determining efficient outcomes. To be sure, it suggests a role for the government to play to compensate for incidents of market failure (e.g., externalities, public goods, increasing returns, asymmetrical information). However, it leaves the form of government intervention open to include direct ownership of resources, regulation, subsidy, and tax schemes.

The theoretical justification for the claim that divestiture will improve productive efficiency rests on extending to PEs the arguments developed by the schools of property rights, public choice, and X-efficiency (e.g., Hanke, 1986; Yarrow, 1989; Niskanen, 1971; Leibenstein, 1978; Galal, 1986). The basic logic of this literature can be stated as follows:

> Ownership is divorced from management in PEs and large private corporations alike. Therefore, managers of both organizations are likely to maximize objectives different from, and often incompatible with, profit maximization. But the deviation from profit maximization, it is

---

market regimes, etc., could lead to a simultaneity problem. For a discussion of these objectives, however, see Hemming and Mansoor, 1988.

argued, is likely to be more substantial in PEs than in their private counterparts.[6/]

The additional deviation stems in principle from the limited accountability of politicians to the public at large and/or the inherent inability of public agencies to effectively monitor managerial performance and provide adequate incentives for improved efficiency. Presumably, the limited accountability arises from imperfections in the political system, while the organizational failure stems primarily from the complicated hierarchy of public agencies, information asymmetry, and the possible coalition between PE managers and civil servants to secure better pay, power, and prestige or to simply lead a tranquil life.

Further exacerbating these failures is the reality that PE managers usually escape the discipline of financial markets, including the threat of takeover. For political and social reasons, they are seldom liquidated. Instead, they are largely cushioned by a soft budget constraint, and preferential access to domestic and foreign credit.

Divestiture, it is argued, will reverse many of these conditions. Divested firms will be free from problems inherent to PEs: political interference, multiple objectives, bureaucratic failure, and, to some degree, information impactedness. As assets become freely tradable, the new owners

---

[6/] In contrast to the profit maximization postulate in neo-classical microeconomic theory, Niskanen (1971) suggests that PE managers maximize their budget; Galal (1986) suggests that they maximize their utility subject to prevailing political and bureaucratic constraints; Williamson (1963) suggests that managers in large private corporations maximize their utility; and Leibenstein (1978) questions whether individuals maximize at all.

will face the threat of takeover and bankruptcy. They will have to raise capital, through their agents (i.e., managers), in the financial market based on the merit of their enterprises. In short, divestiture will internalize the benefits from and the costs of ownership. It will substitute interested shareholders for uninterested bureaucrats, thus motivating the new owners to devise more effective mechanisms to ensure the profitability and long-term value of their firm.

From society's standpoint, the above arguments are compelling for divesting PEs operating in competitive markets. However, the argument does not equally apply to firms operating in noncompetitive markets. In the latter case, the possible gains in productive efficiency have to be weighed against the potential loss in allocative efficiency.[7/] In situations where incidents of market failure (induced or natural) are widespread, where capital markets are underdeveloped, where the institutional capacity of governments to regulate private monopolies is limited, where entrepreneurs are in short supply, and where policy changes to increase competition are not enacted, the allocative inefficiency that could result from divesting monopolistic firms could be substantial. If these losses exceed the potential gain in productive

---

[7/] In a partial equilibrium context, "allocative efficiency" in consumption refers to situations in which the consumers are provided with the quantity and quality of output they most value, given production decisions. In a general equilibrium context, an allocation is said to be efficient (Pareto optimal) if the existing resources in the economy ca not be reallocated without making somebody worse off. In this paper, the term "allocative efficiency" will be used henceforth to refer to the former definition.

efficiency, society may be better off following a course of action other than divestiture.[8/]

The Fiscal Argument

Preliminary inquiries suggest that the net fiscal impact of divesting an enterprise depends primarily on: (a) the value of the assets sold; (b) the increase or decrease in productivity resulting from the transfer of ownership; (c) the budgetary impact of the PE being divested; and (d) the way governments use their receipts from the sale (Hemming and Mansoor, 1988; Heller and Schiller, 1988). In the simplest hypothetical case, if the buyers paid a price equal to the discounted stream of net revenues the Treasury would receive under continued public ownership, if the change in ownership left efficiency, profitability, and income taxes unaffected, and if the PE being sold had imposed no burden on the government budget, divestiture would merely change the government's liquidity position, but not its wealth. Put differently, the government would have substituted liquid assets for equity. The overall budgetary balance would have improved today, but at the expense of future balances. In this case, divestiture would have no impact on public finance in the long run.

However, neutrality of the fiscal incidence of divestiture is unlikely; three good arguments have been advanced to suggest a favorable effect. First,

---

[8/] In suggesting this, the feasibility and costs of adopting other modes of reform are assumed to be less than those associated with divesting a monopoly. Where this assumption does not hold, this conclusion must be modified accordingly.

on the expectation that they can increase profitability, the buyers may pay the government a price higher than the discounted stream of profits that the Treasury would receive under continued public ownership. Second, PEs often impose a burden on the Treasury, which will now be alleviated.[9/] Third, facing fiscal imbalances, governments would be pressured to use the proceeds from the sale to effectively reduce the budget deficit.

From a fiscal point of view, these arguments are compelling for divesting an enterprise. However, there is no assurance that these expectations would materialize. For example, because of favoritism, governments may strike a deal in which the private sector purchaser actually pays a price lower than the Treasury would receive under continued public ownership. Productivity and profitability gains may not materialize, especially if the private owner is able to attain comfortable profit margins in sheltered markets. The PE being divested may have been a positive contributor to the government budget. Governments may perceive the proceeds form the sale as windfall revenues, thus increasing public expenditure.

THE EMPIRICAL GAP

In view of the uncertainties surrounding the efficiency and fiscal consequences of divestiture, empirical verification is crucial. However, as Jones et al. note: "Nowhere in the world are we able to find even a single

---

[9/] Judging from several studies in LDCs, there is substantial evidence in support of the notion that PEs impose a heavy burden on the government budget. See, for example, Floyd et al., 1984, and Nair and Filippides, 1988.

serious and balanced study of what actually happened in the wake of divestiture" (forthcoming).

Although the situation has improved somewhat since this observation was made, the emerging empirical evidence either addresses questions other than those raised above or, with a few exceptions, addresses them unsatisfactorily. A large part of the empirical evidence describes reasons why governments have opted for divestiture and how it has been carried out (e.g., Vuylsteke et al., 1988; Leeds, 1987; Wilson, 1987; Lorch, 1988; Christiansen and Stackhouse, 1987). The primary goal of this literature is to advise policymakers on how to implement a divestiture program, once a decision to divest has been made. Therefore, despite its importance, this literature neither systematically addresses how divestiture has affected the performance of divested firms nor does it attempt to link outcomes to their causal factors.

Some few studies have gone beyond an analysis of the nature of transactions. For example, Foreman-Peck and Manning (1988) compared the performance of British Telecom (BT), which was divested in 1984, with the performance of five telecom firms in Europe, using Total Factor Productivity (TFP) analysis. They concluded that "BT is apparently less efficient ... than [the telecom companies in] both Norway [where the company is state-owned] and Denmark [where ownership is mixed] but more efficient than [the telecom companies in] Spain and Italy [where ownership is mixed]." In another systematic study, Bishop and Kay (1988) compared the performance of a number of divested firms in the U.K. with the performance of a number of firms that continued under public ownership. The authors used several indicators in their

assessment, including revenue, employment, profits, profit margins, and TFP. Their main conclusion is that divested firms experienced an increase in revenue, profits, profit margins, and a positive TFP, but so did the firms that continued under public ownership.

While these two studies are interesting in their own right, they suffer from some methodological problems. By focusing on cross-section data for a number of firms in the telecom industry in Europe, Foreman-Peck and Manning were able to assess the effect of the variations in size and technology on performance, but were unable to link the variations in BT's performance with the change in the company's ownership. Similarly, by focusing on a comparison between a diverse group of divested firms (in the shipping, airline, gas, telecom, oil, and automobile industries) and another diverse group of enterprises under continued public ownership (in the coal, rail, steel, and postal sectors), Bishop's and Kay's results with regard to the effect of the change in ownership are masked by large variations in the underlying market structure and technology in the two groups of firms. Moreover, neither study analyzed the impact of divestiture on allocative efficiency and the budget. Despite these limitations, these are the only such rigorous studies of post-divestiture experience that could be found. No similar studies at the firm level could be found for LDCs.

There is, finally, the empirical literature comparing the performance of public and private enterprises in the same industries and/or across

countries.[10/] This literature does not directly address divestiture per se. Nonetheless, its view of the performance of private versus public ownership is relevant; Milward's conclusion is generally shared by the other authors who have made the attempt: "There is no evidence of a statistically satisfactory kind to suggest that public enterprises in LDCs have a lower level of technical efficiency than private firms operating at the same scale of operation" (Milward, 1988).

PROPOSED FRAMEWORK

To go beyond, or avoid the shortcomings of the above studies, we need to ask three questions about divestiture. The first is factual: What are the changes in economic efficiency and fiscal incidence, if any? The second is hypothetical: What are the possible factors explaining divestiture outcomes? The third is analytical: What is the causal link between divestiture outcomes and their hypothetical determinants?

Measurement Issues

Economic Efficiency The hypothetical cases in Figures 1 and 2 identify the expected changes in economic efficiency. The underlying premise of the two simplified cases is that, for reasons mentioned above, divestiture will

---

[10/] For surveys of this literature, see, for example, Milward, 1988; Domberger and Piggott, 1986; and Svejnar and Hariga, 1987.

lead to a reduction in average costs (Cp<Cg). For purposes of simplification, we can assume the following:

- The marginal, and consequently average, costs are constant under public (Cg) and private (Cp) ownerships.
- The firm operates at a given short-run capacity before and after divestiture.
- Under public ownership, the firm is assumed to break-even (Pg=Cg).[11/]

Under perfect competition (Fig. 1), the consumers are only willing to pay the market price, whether the commodity is produced publicly or privately (Pg = Pp). The PE is merely able to recover its total costs (revenue = cost = ABQgO). In contrast, private producers are able to make profits equal to ABCD (revenue ABQpO - cost DCQpO).[12/] The consumer's surplus remains unchanged. Therefore, the expected net gain to society is captured by the change in the producer's surplus (ABCD).

[11/] Many of these assumptions need not hold. Private owners may, in addition to cost reduction, be able to increase output through greater capacity utilization even in the short run. Marginal costs could be increasing or decreasing. Market structures may be oligopolistic. Firms may enjoy a monopsony power in input markets. These variations are likely to complicate the story considerably, however, without substantially altering the basic notion to be illustrated here.

[12/] Profit, as defined here, is the same as producer's surplus or quasi-rent. Therefore, these terms will be used interchangeably, unless specified otherwise.

Fig. 1: Divestiture of PEs under Competition

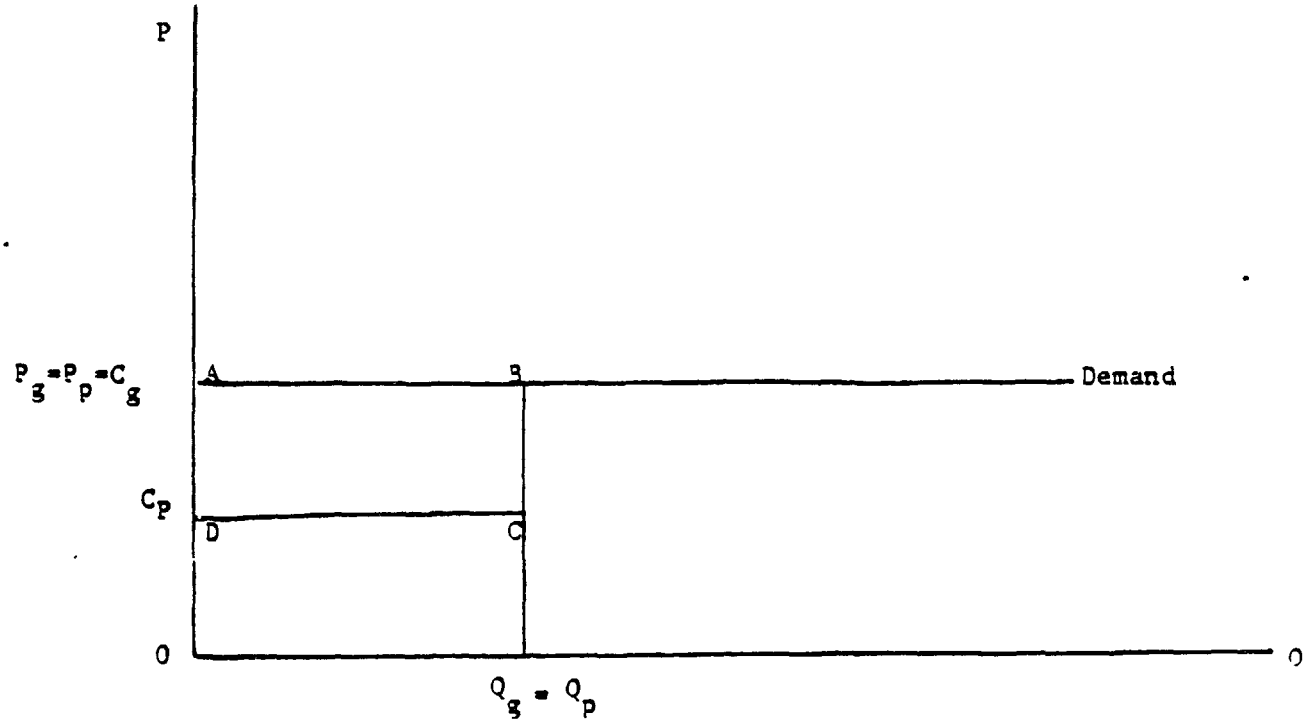
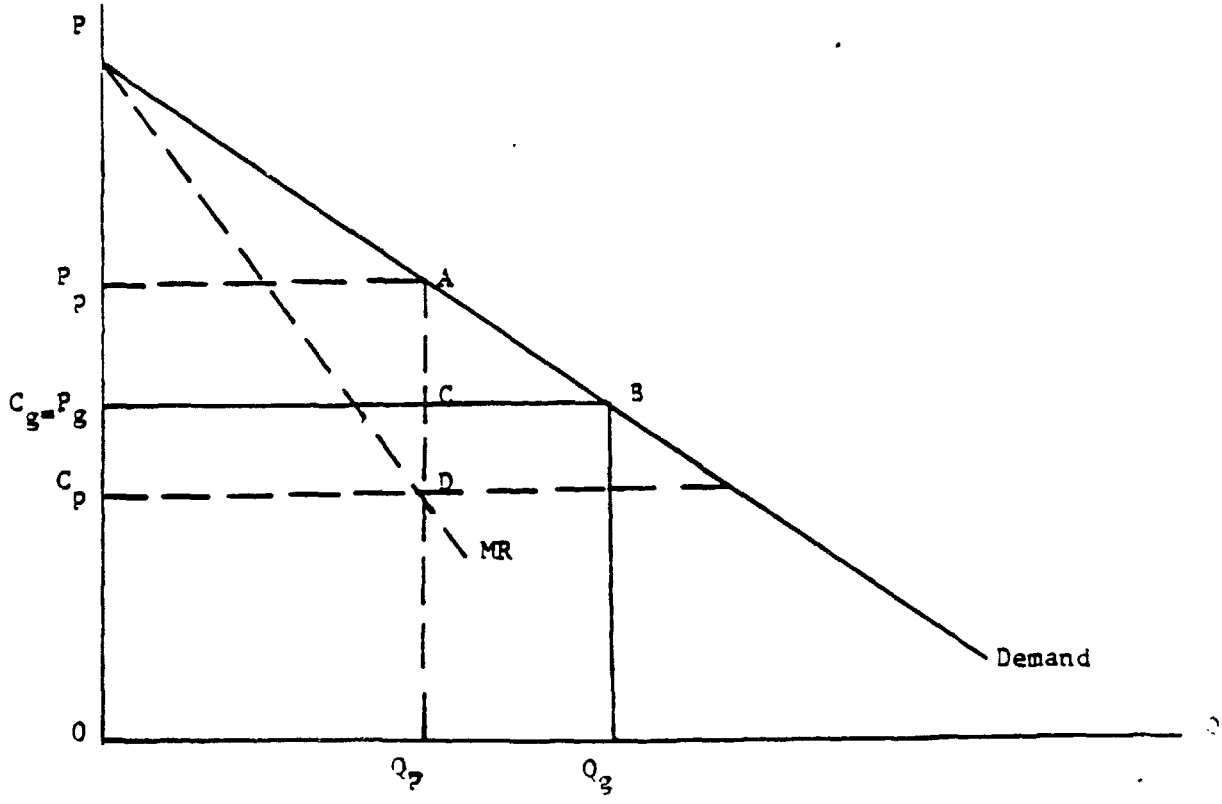


Fig. 2: Divestiture of PEs under Monopoly



Under a monopoly (Fig. 2), the effect of divestiture is not as straightforward. To maximize their profits, the new owners are expected to reduce output (from Qg to Qp) and raise the selling price (from Pg to Pp).[13/] Compared with a zero producer's surplus under public ownership (revenue = cost = CgBQgO), profits under private ownership are expected to go up to PpADCp. Because average cost is expected to decline (from Cg to Cp), part of the increase in profits is attributed to efficiency improvements (CgCDCp), while another part is attained at the expense of the consumers (PpACCg). Traditionally, the latter is assumed to be a mere transfer from the consumers to the producers.[14/] Therefore, the net gain in productive efficiency is the area CgCDCp. Consumers would have lost the area ABC, without making anybody else better off. Therefore, the expected net gain to society depends on the magnitude of the efficiency gains (CgCDCp) minus the loss in consumer's surplus (ABC).

The above analysis compares the operation of an enterprise for one period under public ownership versus another period under private ownership. Clearly, this view is inadequate. A firm's lifetime goes beyond one period; losses in one period could be recovered in another. Moreover, the benefits from divestiture could only materialize after private entrepreneurs have enough time to adjust. Therefore, static changes in the producer's and

---

[13/] Two assumptions are necessary for this outcome to attain: (1) government exercising price control over the output of the PE, and (2) no or ineffective price regulation following the transfer of assets to the private sector.

[14/] Unless, of course, distributional effects are taken into account and various transfers are valued differently, depending on their recipients.

consumer's surplus should be extended to span a firm's life cycle. Indeed, that is why Jones et al. (forthcoming) suggest that the desirability of divestiture should be judged on the basis of the value of the sum of the discounted changes in the producer's and consumer's surplus compared to their level under public ownership.[15/] If the sum is higher than zero, then divestiture is advantageous to society.

The analysis of the producer's surplus, when undertaken in constant prices over time, will reflect the effect of static as well as dynamic changes within the firm; the latter may include introducing new products and penetrating new markets. It will be useful nonetheless to supplement this analysis by estimating TFP and financial profitability. The reason is that TFP analysis distinguishes the contribution to the growth rate of real output of various inputs from the contribution of productivity improvements.[16/] Financial profitability (which is defined as the percentage of profits, before and after taxes, to net worth, sales, and capital employed) is useful because it captures--short of subsidies--the degree of responsiveness of the private owners and managers to market signals compared to their public sector predecessors.

[15/] This statement leaves aside from the formulation of Jones et al. (forthcoming) the shadow multiplier for government revenue. The fiscal impact of divestiture is addressed separately below.

[16/] This is so since TFP is calculated, in one variant, by subtracting the contribution of factor and intermediate inputs from total output growth; in turn, the contribution of factor and intermediate inputs can be derived by calculating a weighted average growth using the respective share of inputs in cost as weights. If the residual is positive, this implies a TFP improvement.

We can find much of the information required to calculate the above measures in the firm's income statement and balance sheet. However, this information must be augmented by information on prices and quantities of major inputs and outputs, and on capacity utilization. Equipped with this information, we can calculate the producer's surplus by subtracting from the sum of production at factor cost and net non-operating income, the costs of intermediate inputs, employee compensation, and rental expenses. We can then derive the changes in the producer's surplus as the difference between the absolute values of two periods. Changes in the consumer's surplus (otherwise known as the deadweight loss) can be approximated by multiplying the change in observed selling prices times the change in observed sold quantities and dividing the outcome by two.[17/] Summed together, the changes in the producer's and consumer's surplus provide a measure of the change in economic efficiency.

In calculating all measures, we might have a problem finding enterprises that have been divested for an average lifetime. Therefore, our estimation has to proceed in two steps. First, we should calculate the measures for the period for which actual data are available. And second, we should estimate the measures for the rest of the firm's lifetime, based on experience and some expectations about future policy shifts and expected responses by enterprises and consumers.

[17/] Fortunately, only the change in the consumer's surplus, not the magnitude, needs to be measured. Otherwise, the shape of the demand curve (or its elasticity) has to be estimated.

The Fiscal Incidence. To judge whether the fiscal incidence of divestiture is positive or negative, we must compare the net present value (NPV) of (1) the funds that would have flowed between the Treasury and the PE, if public ownership had continued, and (2) the funds that flow between the Treasury and the divested firm.

To make this comparison, we must identify the flows that would have occurred under continued public ownership, project them for the rest of the PE's lifetime, and then discount them. In general, these flows are either explicit or implicit, capital or operational.[18/] Explicit transfers from the Treasury to the PE may include: unrequited transfers (subsidies and grants), increases in arrears of tax payments, equity injections, and long-term lending, including foreign capital. Implicit transfers, also from the Treasury to the PE, may include: tax exemptions and capital subsidies (e.g. grants, lower interest rates) and import duty exemptions. Mirroring this classification, explicit transfers from the PE to the Treasury may include: taxes and royalties, increases in government arrears for the enterprise's goods and services, dividends, repayment of equity (if applicable) and long-term borrowing, including foreign capital. Assuming a finite firm lifetime, these flows should also include a scrap value. Implicit transfers, from the PE to the Treasury, may include: the cost of fulfilling non-commercial objectives,--e.g., lower selling prices, excess employment, and provision of social services.[19/]

[18/] These flows have been identified in details in Floyd, et al., 1984.

[19/] The assumption here is that had PEs not rendered these services, the government would have had to do so.

We can use the same framework to estimate the NPV of the flows resulting from divestiture. However, we should use this framework as a checklist to which additional items should be added and subtracted. For example, following divestiture, explicit transfers from the Treasury to the divested firm are not likely to include operational subsidies or capital injections. Yet, they should include the budgetary outlays necessitated by divestiture (the cost of the administrative process, financial and physical restructuring, labor severance payments, re-training schemes, etc.). Similarly, implicit Treasury transfers to the divested firm are not likely to include tax and import duty exemptions and capital subsidies, unless concessions were made when the deal was struck. Explicit transfers in the opposite direction (i.e., from the divested firm to the Treasury) will include the selling price, which corresponds in some sense to the scrap value under the above framework. Similarly, divested firms will not remit dividends to the Treasury, unless of course the government had decided to retain some equity following divestiture. Under both frameworks, corporate taxes will appear as a transfer to the Treasury, provided firms were making profits.

We can get most of the information we need to calculate the two NPVs largely from the accounts of the enterprise and the government budget records. We must also estimate three parameters: the lifetime of the firm, the relevant discounting factor in a given country, and the shadow multiplier for

government revenue.[20/] These parameters are specific to the firm and the country. Therefore, we should consider them on a case-by-case basis.

As explained under the previous section on economic efficiency, we will most likely have trouble finding enterprises that have been divested for an average lifetime of a firm. Therefore, the estimation of the fiscal impact should follow the same two steps outlined above.

Hypothetical Determinants of Divestiture Outcomes

Measured outcomes aside for the moment, several factors can affect the performance of divested firms. These are: (1) the changes the private sector may introduce in the firm after divestiture, (2) the characteristics of the sector, (3) the macroeconomic environment (insofar as it directly affects divested firms), and (4) changes in any of these three factors resulting from the sale negotiation.[21/]

[20/] It has been argued that one dollar in the hands of the private sector is worth more than one dollar in the hands of the government. Browning (1987) has shown, for example, that in the U.S. a dollar in government revenue costs about $1.30 to $1.50 in terms of real resource costs. Therefore, the net budgetary impact of divestiture has to be multiplied by a conversion factor, which should be estimated in each country separately.

[21/] A fifth factor is whether the divested PE was restructured prior to divestiture. Should that be the case, improved performance may be due to the restructuring effort and not to divestiture. The counter-argument is that without divestiture, restructuring may not have taken place. There is another issue, beyond the scope of this paper, as to whether the government should restructure prior to sale, to unravel the marketability of the enterprise, or accept a lower sales price and leave the restructuring to the new owner.

Private Ownership. To maximize profits, the new private sector owners would be expected to introduce observable changes within the firm. These changes may include: production of new products and penetration of new markets; better selection, monitoring, and motivation of managers; more appropriate mix of labor skill and productivity-based compensation schemes; technological rehabilitation, replacement, and expansion; higher capacity utilization; reorganization and financial restructuring; better mix and quality of outputs; more reliable and cheaper sources of inputs; and more appropriate techniques for managing inventory. The null hypothesis is to observe fewer or none of these changes.

Sector Characteristics. The characteristics of the divested firm's sector can cripple or boost its performance, irrespective of any changes within the enterprise. The most critical of these include market structures, the effectiveness of any relevant regulating agencies and the appropriateness of applied regulatory formulas (if warranted), and the nature of sector technology. The expectation is that the more competitive the market structures (or the more effective the regulatory arrangements of non-competitive markets) and the more cost-saving the technologies, the greater the likelihood that divestiture will induce greater efficiency improvements. The converse is also expected to hold.

Macroeconomic Environment. Several macroeconomic variables are also likely to directly affect the performance of divested firms. These include: the state of economic activity, the state of capital market development, and corporate tax and exchange rate policies. For example, a booming economy would

increase demand, thus improve the performance of all firms, divested or not. Conversely, a recession would shrink demand, thus limiting the opportunity for domestic sales of most, if not all, firms. Similarly, well-developed capital markets, a neutral corporate tax system, and more realistic exchange rate policies are expected, in turn, to impose financial discipline, promote efficient allocation of resources, and stimulate the activities of exporting firms, including divested ones. Alternative policies and underdeveloped capital markets are expected to have the opposite effects.[22/]

Negotiated Terms. Finally, the specific details negotiated during the divestiture transaction can shape the firm's performance. For example, in striking the deal, the new owners may have had to agree to limitations to their ability to respond flexibly to market environments (e.g., the transaction agreement may restrict firing redundant workers, closing plants, or developing different markets and distribution channels). Conversely, the deal is expected to have a positive impact on the firm's performance if it permits the new owners to turn their enterprises around as necessary. Similarly, divestiture transactions are expected to hurt overall economic performance if they reduce competition--that is, if they involve concessions to sweeten the deal (e.g., granting monopoly rights, protection from imports, tax exemptions, and preferential access to credit and other inputs). Conversely, divestiture transactions can have a positive influence if they are used to increase competition (e.g., by breaking up monopolies, facilitating

---

[22/] Evidence of divergence between economic efficiency and financial profitability would uncover how these policies might have affected divestiture outcomes.

exit and entry, regulating private monopolies, and providing equal treatment between PEs and divested firms).

Many of these factors can and should be quantified. For example, GDP growth rates can be used as a proxy to describe the state of economic activity, and economic concentration ratios can be used to classify market structures. Other factors have to be assessed qualitatively. These include the quality of the new managers and terms of their contracts, the effectiveness of inventory management techniques, the appropriateness of the regulatory formulas and the effectiveness of their implementing agencies, and the detailed transaction story (e.g., the role played and concessions won by trade unions, the national origins of buyers, and modality of divestiture).

Issues of Attribution

The next critical question is: to what extent are observed changes in performance due to the divestiture itself, as opposed to exogenous concurrent factors? For example, if a divested firm's sales increase and profits grow in a time of macroeconomic expansion, is it due to better management, to exogenous expansion of demand, or to both?

Analytically, the answer hinges on the selection of cases and the choice of a "counter-factual"--that is, what would have happened in the absence of divestiture? The choice of cases involves a trade-off between studying one firm in one country in detail and studying many cases, sectors, and countries in much less depth. The choice of an appropriate counter-

factual, in a small sample setting, admittedly involves as much art as science.[23/] It inevitably entails subjective interpretation of outcomes and their causal factors, thus implying room for error and allegations of special pleading.

To reduce these limitations and reach even tentatively generalizable policy conclusions, we need to strike a balance between depth and coverage. We should attempt to control for the various sets of competing explanatory factors, and to tease causality out of limited data. Errors in interpretation should be fully recognized through sensitivity analysis, with an open data matrix allowing others to examine how the conclusions were reached. These issues are addressed below under the headings "case studies without apology", "sample selection", and "comparative assessment".

Case Studies Without Apology. The alternative to following the case study approach is undertaking rigorous econometric analysis. Such analysis is infeasible or inferior in the present context for several reasons. First of all, it is extremely demanding, requiring a larger number of observations with a sufficiently lengthy history than exists in most countries, because divestiture is a relatively recent phenomena. It further requires a complete specification of the divestiture phenomenon, which has yet to be developed. But even if these requirements are satisfied, econometric analysis will still miss detailed and valuable information that can only be captured through carefully constructed interviews with the owners, workers, rivals, and

---

[23/] The problem of attribution, encountered here, is common to any study that adopts the case-study approach.

bureaucrats. Obvious examples include an assessment of the transparency and fairness of the transaction process, the effectiveness of the regulatory agency, and the appropriateness of the regulatory formulae applied (e.g., output pricing). Given the present state of theoretical development, there appears to be no alternative to a case study approach; moreover, this approach will provide valuable contextual information that would neither be revealed nor analyzed in an econometric study.

To be sure, the case study approach has its own disadvantages. At one extreme is the well-known problem of generalization, i.e., a story of one firm in a given sector and country is not necessarily relevant to other cases. Further, the approach is incapable of testing statistically the sign, relevance, and significance of the independent variables individually. But we can reduce these limitations by: (1) deliberately (rather than randomly) selecting the sample to ensure a wide coverage and (2) explicitly conducting various performance comparisons in an attempt to establish causality.

Sample Selection. In trying to select a sample that represents the universe as much as possible at a reasonable cost, the following criteria may be useful:

(a) The sample should include cases from both developed and developing countries so that performance could be contrasted under radically different circumstances.

(b) The cases should be selected from competitive and non-competitive market structures to permit inter-sectoral variations.[24/]

(c) The cases should be sufficiently large to warrant their investigation, but not too large to affect the whole economy substantially. Otherwise, the partial equilibrium analysis proposed here would be inadequate.

(d) Selected firms should have as much post-divestiture history as possible, so that private entrepreneurs would have had an opportunity to introduce whatever adjustments they deemed necessary.

(e) For obvious reasons, preference should be given to divested firms with sufficient documentation.

Comparative Assessment. Various performance comparisons can be useful in trying to tease causality out of limited data. (Five such comparisons are summarized in the table below.) Each of the comparisons is designed to control for certain variables, permitting the other(s) to vary. The first three are intended to tackle the question of whether the change of ownership makes a difference, while the fourth and fifth are intended to explore whether variation in sectors and macroeconomic settings effect outcomes significantly.

[24/] Alternatively, the sample could be selected narrowly from one sector (e.g., transport) in a set of developing countries. While more manageable, this alternative precludes the possibility of capturing the effect on divestiture outcomes of sectoral variations and differences between developed and developing countries.

The first performance comparison is for the same enterprise before and after divestiture. It builds on the notion that the enterprise most similar to the divested firm is the enterprise itself before divestiture. Therefore, any changes that may be observed within the firm following divestiture could be largely attributed to the change in ownership. This conclusion would particularly hold when associated with stable macroeconomic conditions and similar sectoral characteristics before and after divestiture.

Performance Comparisons and Most Likely Related Explanatory Variable

	PERFORMANCE COMPARISONS				
VARIABLES	Same Firm Before/ After (1)	Divested/ Undivested Firms, Same Sector, Same Country (2)	Same Firm With/ Without Divest. (3)	Divested Firms, Diff. Sectors, Same Country (4)	Divested Firms, Diff. Sectors, Diff. Countries (5)
1. Ownership	x	x	x		
2. Sectoral Charact's				x	
3. Macroeconomic Conditions		x			x
4. Transaction	(Likely to influence outcomes through its influence on 1-3)				

The second comparison corresponds to the Bishop and Kay study, cited above, with one basic difference. That is, the comparison proposed here is between divested and undivested firms in the same sector (e.g., in the textile sector, rather than in the textile and electricity sectors) and the same country (e.g., Chile). This comparison would further substantiate the conclusion of

the previous one if it were to reveal a superiority in the performance of divested firms in comparison with their counterparts that remained public. If the comparison alternatively revealed insignificant differences in performance, as happened in the Bishop and Kay study of the U.K., several competing explanations are possible: the economy was booming so that all firms were doing well, performance improvements of undivested firms were the result of the threat of divestiture, or a combination of the two.

To sort out the effect of the change of ownership from other exogenous concurrent factors, such as the effect of a booming economy, we can make a third comparison between the performance of the divested firm and an explicit counter-factual (i.e., the hypothetical performance of the divested firm had it continued public). The counter-factual can be constructed on the basis of knowledge about the operation of the enterprise before its divestiture, the actual operation of the enterprise once divested, and additional independent knowledge (e.g., the state of economic activity, the income elasticity of demand).

The fourth comparison is between the performance of divested firms in competitive and non-competitive markets in the same country (e.g., Chile). By permitting sectoral variations (e.g., textile and electricity), this comparison should uncover the extent to which market structures, regulatory arrangements (if warranted), and technologies made a difference.

The fifth and final comparison is between the performance of divested firms in the same industry (e.g., textile) but across countries (e.g., the

U.K. and Chile). This comparison should shed some light on whether inter-country variations (macro-settings) made a difference.

The conclusion of the five comparisons would be most compelling if they were to uncover a systematic pattern such as the following. Divested firms performed consistently better than they did under previous public ownership, than did similar undivested public firms, and than their hypothetical performance had they continued public. In this case, the evidence would unequivocally support the notion that society would be better off leaving that activity to the private sector. Should the analysis further uncover that the performance of divested firms was superior when they operated in competitive (or, alternatively, effectively regulated) markets, it would have further strengthened the position that competition and effective regulation are important determinants of divestiture outcomes. Finally, should the analysis reveal that divested firms operated more efficiently in countries with well-developed capital markets and sound exchange rate, tax, and credit policies, the analysis would have further supported expected predictions. Findings in the opposite direction would call into question the current wisdom. In both instances, however, a credible story of causality would have been established.

In the process, substantial knowledge would have been accumulated--for example, what were the conditions that led to observed outcomes, and whether they had to do with the nature of ownership, sector characteristics, the macro environment, or the terms of the deal. The analysis would have provided a piece of evidence in which the assumptions are made explicit, rather than buried implicitly in rhetoric, thus inviting others to objectively contradict

or support the findings. The ultimate beneficiary of all would have been policymakers, especially those embarking on divestiture programs.

REFERENCES

Bishop, M. and Kay, J. Privatization in the U.K.: Lessons from Experience. (Draft), November 1988.

Browning, E., "On the Marginal Welfare Cost of Taxation, American Economic Review, 77, March 1987.

Christiansen, R. and Stackhouse, L. Privatization of Agricultural Trading in Malawi. Working Paper of the Center for Business and Government, John F. Kennedy School of Government, Harvard University. Cambridge, 1987.

Domberger, S. and Piggott, J. "Privatization Policies and Public Enterprises: A Survey. Economic Record, 62, 1986.

Floyd, R., Gray, C. and Short, R. Public Enterprise in Mixed Economies, Some Macroeconomic Aspects. The International Monetary Fund, Washington D.C., 1984.

Foreman-Peck, J. and Manning, D. How Well is BT Performing? An International Comparison of Telecommunications Total Factor Productivity, Department of Economics, The University of Newcastle, January, 1988

Galal, A. A Theory of Capital Utilization in Public Enterprises, with an Application to Egypt. Ph.D. dissertation, Boston University, 1986

Galal, A., Ex-Post Performance of Divested State-Owned Enterprises, Research Proposal, Washington, D.C., The World Bank, May 1989.

Hanke, S. The Privatization Option: An Economic Analysis. Economic Impact, 3, 1986.

Heller, P. and Schiller, C. The Fiscal Impact of Privatization, with Some Examples from Arab Countries. IMF, September, 1988.

Hemming, R. and Mansoor, A. Privatization and Public Enterprises. Occasional Paper No. 56, Washington: International Monetary Fund, Washington D.C., 1987.

Jones, L., Vogelsang, I. and Tandon, P. Selling Public Enterprises: A Cost/Benefit Methodology, MIT Press, (forthcoming).

Leeds, R. Turkey: Implementation of a Privatization Strategy. Working Paper of the Center for Business and Government, John F. Kennedy School of Government, Harvard University. Cambridge, December 1987.

Leeds, R. Privatization in Jamaica: Two Case Studies. Working Paper of the Center for Business and Government, John F. Kennedy School of Government, Harvard University. Cambridge, 1988.

Leibenstein, H., General X-Efficiency Theory and Economic Development, New York, Oxford University, 1978.

Lorch, K. The Privatization Transaction and Its Longer Term Effects: A Case Study of the Textile Industry in Bangladesh. Working Paper of the Center for Business and Government, John F. Kennedy School of Government, Harvard University. Cambridge, 1988.

Milward, R. "Measured Sources of Inefficiency in the Performance of Public and Private Enterprises in LDCs". in Paul Cook and Colin Kirkpatric, eds., Privatization in Less Developed Countries. New York: St. Martin's Press, 1988.

Nair, J. and Filippides, A. State-Owned Enterprises and Public Sector Deficits in Developing Countries: A Comparative Statistical Assessment. The World Bank, Background Paper to the 1988 World Development Report, Washington, D.C., 1988.

Nellis, J. and Kikeri, S. Privatization of Public Enterprises. CECPS, World Bank, October 20, 1988.

Niskanen, W. Bureaucracy and Representative Government. Chicago, Aldine-Atherton, 1971

Svejnar, J. and Hariga, M. Public vs. Private Ownership, Export Orientation and Enterprise Productivity in a Developing Economy: Evidence from Tunisia. Department of Economics, University of Pittsburgh, Working Paper No. 217 Pittsburgh, 1987.

Vuylsteke, C., Nankani, H. and Candoy-Sekse. Techniques of Privatization of State-Owned Enterprises. World Bank Technical Paper No. 88. Three Volumes. Washington, D.C., 1988.

Williamson, O. "Managerial Discretion and Business Behavior". American Economic Review. December 1963.

Wilson, E. Privatization in the Ivory Coast: Three Case Studies. Working Paper of the Center for Business and Government, John F. Kennedy School of Government, Harvard University. Cambridge, 1987.

Yarrow, G. "Does Ownership Matter?" in Cento Veljanovski, eds., Privatization & Competition: A Market Prospectus. Institute of Economic Affairs, Hobart Paperback 28, London, 1989.

PRE Working Paper Series

	Title	Author	Date	Contact for paper
WPS455	A Formal Estimation of the Effect of the MFA on Clothing Exports from LDCs	Junichi Goto	June 1990	M. T. Sanchez 33731
WPS456	Improving the Supply and Use of Essential Drugs in Sub-Saharan Africa	S. D. Foster	June 1990	Z. Vania 33664
WPS457	Financing Health Services in Africa: An Assessment of Alternative Approaches	Germano Mwabu	June 1990	Z. Vania 33664
WPS458	Does Japanese Direct Foreign Investment Promote Japanese Imports from Developing Countries?	Kenji Takeuchi	June 1990	J. Epps 33710
WPS459	Policies for Economic Development	Stanley Fischer Vinod Thomas	June 1990	WDR Office 31393
WPS460	Does Food Aid Depress Food Production? The Disincentive Dilemma in the African Context	Victor Lavy	July 1990	A. Murphy 33750
WPS461	Labor Market Participation, Returns to Education, and Male-Female Wage Differences in Peru	Shahidur R. Khandker	July 1990	B. Smith 35108
WPS462	An Alternative View of Tax Incidence Analysis for Developing Countries	Anwar Shah John Whalley	July 1990	A. Bhalla 37699
WPS463	Redefining Government's Role in Agriculture in the Nineties	Odin Knudsen John Nash	August 1990	K. Cabana 37946
WPS464	Does A Woman's Education Affect Her Husband's Earnings? Results for Israel in A Dual Labor Market	Shoshana Neuman Adrian Ziderman	August 1990	V. Charles 33651
WPS465	How Integrated Are Tropical Timber Markets?	Panos Varangis	August 1990	D. Gustafson 33714
WPS466	Is There An Intra-Household Kuznets Curve?	Lawrence Haddad Ravi Kanbur	August 1990	J. Sweeney 31021
WPS467	Structural Adjustment and Living Conditions in Developing Countries	Nanak Kakwani Elene Makonnen Jacques van der Gaag	August 1990	B. Rosa 33751
WPS468	Does the Structure of Production Affect Demand for Schooling in Peru?	Indermit Gill	August 1990	M. Abundo 36820

PRE Working Paper Series

	Title	Author	Date	Contact for paper
WPS469	Modeling Economic Behavior in Peru's Informal Urban Retail Sector	J. Barry Smith Morton Stelcner	August 1990	M. Abundo 36820
WPS470	What Do Alternative Measures of Comparative Advantage Reveal About the Composition of Developing Countries' Exports?	Alexander J. Yeats	August 1990	J. Epps 33710
WPS471	The Determinants of Farm Investment and Residential Construction in Post-Reform China	Gershon Feder Lawrence J. Lau Justin Lin Xiaopeng Luo	August 1990	C. Spooner 30464
WPS472	Gains in the Education of Peruvian Women, 1940 to 1980	Elizabeth M. King Rosemary Bellew	August 1990	C. Cristobal 33640
WPS473	Adjustment, Investment, and the Real Exchange Rate in Developing Countries	Riccardo Faini Jaime de Melo	August 1990	R. Sugui 37951
WPS474	Methods for Measuring the Effect of Adjustment Policies on Income Distribution	Anne Maasland	August 1990	P. Dixon 39175
WPS475	Does Divestiture Matter? A Framework for Learning from Experience	Ahmed Galal	August 1990	G. Orraca-Tetteh 37646